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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/743,362      | 12/22/2003  | David M. Scoville    | 00655P1218US        | 7971             |

32116 7590 09/02/2005

WOOD, PHILLIPS, KATZ, CLARK & MORTIMER  
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CHICAGO, IL 60661

EXAMINER

DUONG, THO V

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

3743

DATE MAILED: 09/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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|------------------------------|--------------------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/743,362 | <b>Applicant(s)</b><br>SCOVILLE ET AL. |  |
|                              | <b>Examiner</b><br>Tho v. Duong      | <b>Art Unit</b><br>3743                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 22 June 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 9-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/22/2005</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION*****Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/22/2005 has been entered.

The indicated allowability of claim 3 and 6 are withdrawn in view of the newly discovered reference(s) to Rawley and Watanabe. Rejections based on the newly cited reference(s) follow.

Claim 1-16 are pending. Claim 9-16 remain withdrawn from further consideration.

Applicant is reminded to change the status of claim 16 from "original" to "withdrawn" as the status identifier next to the claim.

***Response to Arguments***

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the hole are not facing each other) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). In claim 1, "one tube slot in each header being unoccupied, said one tube slots in each header being aligned with each other and located at a predetermined

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location between the ends of said headers and between two groups of said flattened tubes”, it is clearly that the limitation that said one tube slots in each header must facing each other is not recited in the rejected claim. Applicant’s argument that the opening (135) of Kokubunji is not a tube slot, has been very carefully considered but is not deemed to be persuasive because the opening (135) of Kokubunji is structurally and functionally similar to the “tube slot” as claimed. Kokubunji discloses (figure 4) that the opening (135) is located on the header having a “slot” shape and has a function of draining any fluid that is leaked out from the device. As claimed, the “one tube slot” is not for insertion of any tube.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,2 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Kokubunji et al. (US 2002/0040776A1). Kokubunji discloses (figures 4,6 and paragraph 65 and 66) a multi-fluid heat exchanger comprising a first and second, elongated, spaced, parallel tubular headers (130) having opposing ends; uniformly spaced elongated tube slots in each of said headers with the tube slots in one header facing and aligned with the tube slots in the other header; a plurality of flattened tubes (111,121) extending between the headers and having ends receiving in aligned ones of the tube slots; one tube slot (135) in each header being unoccupied and being aligned with each other and located between two groups of the flattened tubes (A,B); a pair of baffles (134) in each header, one on one

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side of the one tube slot (135) and between the one tube slot (135) and the adjacent tube slot, which receives the end tube (111) of group (A) and the other baffle (134) on the opposite side of the one tube slot (135) and between the one tube slot (135) and the adjacent tube slot on the opposite side, which receives the end tube (121) of group (B); serpentine fins (112,122) extending between and in heat transfer relation with at least the adjacent tubes in each of the two groups (A,B); and an additional fin (141) in heat transfer relation with an end tube in each of the two groups (A,B).

Claims 1,2 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Nishishita Kunihiro (EP 0859209 A1). Nishishita discloses (figures 31 and 34) a multi-fluid heat exchanger comprising a first and second, elongated, spaced, parallel tubular headers (2) having opposing ends; uniformly spaced elongated tube slots in each of said headers with the tube slots in one header facing and aligned with the tube slots in the other header; a plurality of flattened tubes (4a,4b) extending between the headers and having ends receiving in aligned ones of the tube slots; one weep hole (15) in each header being unoccupied and being aligned with each other and located between two groups of the flattened tubes (A,B); a pair of baffles (10) in each header, one on one side of the weep hole (15) and between the weep hole (15) and the adjacent tube slot, which receives the end tube (4a) of group (A) and the other baffle (10) on the opposite side of the weep hole (15) and between the weep hole (15) and the adjacent tube slot on the opposite side, which receives the end tube (4b) of group (B); serpentine fins (3a) extending between and in heat transfer relation with at least the adjacent tubes in each of the two groups (A,B); and an additional fin(12) in heat transfer relation with an end tube in each of the two groups (A,B).

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3,5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kokubunji in view of Watanabe Shoichi (JP 10141875). Kokubunji substantially discloses all of applicant's claimed invention as discussed above except for the limitation that the additional fin (12) is a serpentine fin with a height of greater than the height or twice the height of the fin in the first group and the second group. Watanabe discloses (figures 1-3) a stackable heat exchanger that has a first group of tube (2) and a second group of tube (3) separated by a single serpentine fin (6), which has a height of greater than twice than height of the fin (5) (see relative heights in figure 3 between fins 5 and 6), for a purpose of effectively thermal insulating the first group tube from the second group tube while abolishing the cost of dummy tubes and a plurality of dummy fins. Since Kokubunji and Watanabe are both from the same field of endeavor and/or analogous art, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use Watanabe's teaching in Kokubunji's heat exchanger for the purpose of effectively thermal insulating the first group of tube from the second group of tube while abolishing the cost of dummy tubes and a plurality of dummy fins.

Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishishita in view of Watanabe Shoichi (JP 10141875). Nishishita substantially discloses

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all of applicant's claimed invention as discussed above except for the limitation that the additional fin (12) is a serpentine fin with a height of greater than the height of the fin in the first group and the second group. Watanabe discloses (figures 1-3) a stackable heat exchanger that has a first group of tube (2) and a second group of tube (3) separated by a serpentine fin (6), which has a height of greater than twice than height of the fin (5) (see relative heights in figure 3 between fins 5 and 6), for a purpose of improving the thermally insulation between the first group tube and the second group tube due to a farther distance between the groups.

Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rawley et al. (GB 2377268) in view of Watanabe Shoichi (JP 1014875). Rawley discloses (figure 1 and page 4, lines 13-14) a multi-fluid heat exchanger comprising a first and second, elongated, spaced, parallel tubular headers having opposing ends; uniformly spaced elongated tube slots in each of said headers with the tube slots in one header facing and aligned with the tube slots in the other header; a plurality of flattened tubes (6-13) extending between the headers and having ends receiving in aligned ones of the tube slots; one weep hole (23,24) in each header being unoccupied and being aligned with each other and located between two groups of the flattened tubes (2,3); a pair of baffles (14,15,17,18) in each header, one baffle (14) on one side of the weep hole (23) and between the weep hole (23) and the adjacent tube slot, which receives the end tube (7) of group (2) and the other baffle (15) on the opposite side of the weep hole (23) and between the weep hole and the adjacent tube slot on the opposite side, which receives the end tube (10) of group (3); fins extending between and in heat transfer relation with at least the adjacent tubes in each of the two groups (2,3); and an additional fin in heat

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transfer relation with an end tube (8,10) in each of the two groups (2,3). Rawley does not disclose additional serpentine fin with a height of greater than the height of the fin in the first group and the second group or about twice the fin plus the minor dimension of one of the tube. Watanabe discloses (figures 1-3) a stackable heat exchanger that has a first group of tube (2) and a second group of tube (3) separated by a single serpentine fin (6), which has a height of greater than height of the fin (5) (see relative heights in figure 3 between fins 5 and 6). for a purpose of effectively thermal insulating the first group tube from the second group tube while abolishing the cost of a dummy tube and two dummy fins. The combination devices of Kokubunji and Watanabe would inherently result in a large single serpentine fin, which has a height of equal to twice the fins within the group tube plus the minor dimension of the tube. Since Kokubunji and Watanabe are both from the same field of endeavor and/or analogous art, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use Watanabe's teaching in Kokubunji's heat exchanger for the purpose of effectively thermal insulating the first group of tube from the second group of tube while abolishing the cost of a dummy tube and two dummy fins.

#### ***Allowable Subject Matter***

Claims 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tho v. Duong whose telephone number is 571-272-4793. The examiner can normally be reached on M-F (first Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennet can be reached on 571-272-4791. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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August 26, 2005



Tho v Duong  
Primary Examiner  
Art Unit 3743